## Patent claims

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- 1. A method for isolating and purifying nucleic acids and/or oligonucleotides from a biological sample, characterized in that
  - the biological sample is disrupted, protein components and other insoluble components are removed,
  - an aqueous solution of potassium acetate is added to the residue and non-soluble components are removed,
  - the potassium acetate-containing solution is mixed and incubated with an alcoholic solution containing a detergent,
- the supernatant obtained is contacted and incubated with a silica gel-like support material, and
- the purified nucleic acids and/or oligonucleotides are isolated from the soluble fraction.
- 2. The method as claimed in claim 1, characterized in that the alcoholic solution is a mixture of isopropanol with an ionic detergent.
- claimed in claim ' method as 3. The alcoholid solution characterized that the in detergents more ionic contains one or concentration of 0.5 to 10% (w/v) in 100% strength 35 alcohol.

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- 4. The method as claimed in any of claims 1 to 3, characterized in that an aqueous solution containing 1 to 6 M potassium acetate is used.
- 5 5. The method as claimed in claim 4, characterized in that the solution contains 2 to 4 M potassium acetate.
  - 6. The method as claimed in any of claims 1 to 5, characterized in that the silica gel-like support material used is a suspension of silicon dioxide.
    - 7. The method as claimed in any of claims 1 to 6, characterized in that the silica gel-like support material is rewashed with acetone.
    - 8. The method as claimed in any of claims 1 to 7, characterized in that plasmid DNA with an endotoxin content of less than 100  $U/\mu g$  is obtained.
    - 9. The method as claimed in claim 8, characterized in that the endotoxin dontent is not more than 10 U/μg of plasmid DNA.
    - 10. An endotoxin-free nucleic acid or oligonucleotide or a nucleic acid or oligonucleotide with reduced endotoxin content obtainable according to a method as claimed in any of claims 1 to 9.
    - 11. The use of nucleic acids and/or oligonucleotides obtained according to any of the methods as claimed in any of claims 1 to 9 for transfecting eukaryotic or prokaryotic cells.
    - 12. The use of a nucleic acid and/or oligonucleotides obtained according to any of the methods as claimed in any of claims 1 to 9 for producing an agent for the treatment of genetic disorders.

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- 13. A composition comprising the following components:
  - at least one solution suitable for the disruption of a biological sample,
  - an aqueous potassium acetate solution,
  - a solution  $\Diamond$ f detergent/alcohol, and
  - a silica gel\like support material.
- 10 14. The composition as claimed in claim 13, characterized in that the following components are included:
  - a solution suitable for alkaline lysis of biological sample material,
  - a salt solution containing 1 to 6 M potassium acetate,
  - an alcoholic solution containing 0.5 to 10% (w/v) SDS in 100% strength isopropanol and
  - a silica gel-like support material.
  - 15. The composition as claimed in claim 13 or 14, characterized in that the support material included is a suspension of silicon dioxide.
- 16. The use of potassium acetate for isolating, purifying and/or separating endotoxin-free nucleic acids and/or oligonucleotides or nucleic acids and/or oligonucleotides with reduced endotoxin content from and of, respectively, a pre-purified biological sample.

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